AMENDMENTS TO THE SPECIFICATION

Please replace the Abstract of the present application with the following Abstract:

A physical layer protocol is added toMethod and apparatus for retrieving retrieve the in-band downstream ADSL channel frequency response H(f), the noise N(f), measured at initialization and the signal to noise ratio SNR(f) measured at show time on a per bin basis, in the upstream or downstream direction. Additionally retrieval of similar in-band information may be provided in the upstream direction. The definition of the message protocol for retrieving during show-time the following ATU-R information on a per-bin basis: In-band channel frequency response per bin HR(f) measured during the initialization referred back to the receiver tip and ring copper pair by the ARU-R; In-band noise estimation per-bin NR(f) during the initialization referred back to the receiver tip and ring copper pair by the ATU-R; and the signal-to-noise ratio per-bin SNRR(f) during show-time referred back to the receiver tip and ring copper pair by the ATU-R. The values of SNRR(f) should be updated as they change. An addition of the programming interface in the ADSL ATU-C chipset level makes similar information available for the upstream direction, that is Nc(f), Nc(f) and SNRC(f). Initialization H(f) can beis used for analyzing the physical copper loop condition between tip and ring. Initialization N(f) can be is used for analyzing the crosstalk. Showtime SNR(f) can beis used for analyzing time dependent changes in crosstalk levels and line attenuation. (such as due to moisture). The combination of H(f), N(f) and SNR(f) can be used for trouble-shooting why the data rate cannot reach allows analysis of the line conditions for reaching the maximum data rate of a given loop, scheduling maintenance and plant update.